

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-24 (Canceled).

Claim 25 (Currently Amended): ~~The display apparatus according to claim 22, A~~  
display apparatus capable of detecting that an arbitrary place of a display screen has been  
pointed by a human hand or a pointing member, the display apparatus comprising:

display elements formed near intersections of signal lines and scanning lines  
respectively arranged in vertical and horizontal directions;

image pickup units which pick up incident light in a predetermined range;

D/A conversion circuits provided every a plurality of signal lines to supply pixel  
data for display to a plurality of signal lines associated therewith;

amplifier circuits which output the picked-up image data in the image pickup units  
from pixels by using signal lines that are not supplied with pixel data, while the D/A  
conversion circuits supply pixel data to signal lines in order; and

a pointer detection portion which detects a position pointed by a hand or a pointing  
member on the display screen, on the basis of the picked-up image data,

wherein whenever the image pickup units perform image pickup, the pointer detection  
portion detects an image that indicates a pointed position, and when a diameter of the image  
is maximized, the pointer detection portion judges that the display screen has been pressed  
strongly by a hand or a pointing member.

Claim 26 (Currently Amended): ~~The display apparatus according to claim 22, A~~  
display apparatus capable of detecting that an arbitrary place of a display screen has been  
pointed by a human hand or a pointing member, the display apparatus comprising:

display elements formed near intersections of signal lines and scanning lines  
respectively arranged in vertical and horizontal directions;  
image pickup units which pick up incident light in a predetermined range;  
D/A conversion circuits provided every a plurality of signal lines to supply pixel  
data for display to a plurality of signal lines associated therewith;  
amplifier circuits which output the picked-up image data in the image pickup units  
from pixels by using signal lines that are not supplied with pixel data, while the D/A  
conversion circuits supply pixel data to signal lines in order; and  
a pointer detection portion which detects a position pointed by a hand or a pointing  
member on the display screen, on the basis of the picked-up image data,  
wherein the pointer detection portion performs a plurality of product sum  
computations for successively adding image data of every scanning line, and a division  
computation conducted using a result of the product sum computations as a numerator or a  
denominator.

Claim 27 (Original): The display apparatus according to claim 26, comprising:  
a first computation circuit formed on the substrate on which the display elements are  
formed to conduct the product sum computations; and  
a second computation circuit formed on a semiconductor substrate different from the  
substrate on which the display elements are formed to conduct the division computation.

Claim 28 (Currently Amended): ~~The display apparatus according to claim 22, A~~  
display apparatus capable of detecting that an arbitrary place of a display screen has been  
pointed by a human hand or a pointing member, the display apparatus comprising:

Claim 29 (Original): The display apparatus according to claim 28, wherein the picked-up image data is a picked-up image subjected to image processing.

30 (Canceled).

display elements formed near intersections of signal lines and scanning lines  
respectively arranged in vertical and horizontal directions;

image pickup units which pick up incident light in a predetermined range;

D/A conversion circuits provided every a plurality of signal lines to supply pixel  
data for display to a plurality of signal lines associated therewith;

amplifier circuits which output the picked-up image data in the image pickup units  
from pixels by using signal lines that are not supplied with pixel data, while the D/A  
conversion circuits supply pixel data to signal lines in order; and

a pointer detection portion which detects a position pointed by a hand or a pointing  
member on the display screen, on the basis of the picked-up image data, wherein

denoting the number of pixels in a signal line direction of the display screen by X, the  
number of pixels in a scanning line direction by Y, and the picked-up image data in an  
arbitrary pixel (x, y) (where  $0 \leq x \leq X$  and  $0 \leq y \leq Y$ ) by  $L(x, y)$ ,

the pointer detection portion obtains central coordinates ( $E_x, E_y$ ) of the hand or  
pointing member using expression (17), and obtains widths ( $V_x, V_y$ ) of the hand or pointing  
member in the x direction and y direction using expression (18).

$$E_x = \frac{\sum_{y=0}^{239} \sum_{x=0}^{319} xL(x, y)}{\sum_{y=0}^{239} \sum_{x=0}^{319} L(x, y)} \quad E_y = \frac{\sum_{y=0}^{239} \sum_{x=0}^{319} yL(x, y)}{\sum_{y=0}^{239} \sum_{x=0}^{319} L(x, y)} \quad (17)$$

$$V_x = \frac{\sum_{y=0}^{239} \sum_{x=0}^{319} (x - E_x)^2 L(x, y)}{\sum_{y=0}^{239} \sum_{x=0}^{319} L(x, y)} \quad V_y = \frac{\sum_{y=0}^{239} \sum_{x=0}^{319} (y - E_y)^2 L(x, y)}{\sum_{y=0}^{239} \sum_{x=0}^{319} L(x, y)} \quad (18)$$